

CLAIMS

1. (Currently Amended) A stent graft device suitable for placement at a vascular treatment site, the stent graft device comprising:

a proximal, inflow end of the stent graft device as a whole;

a distal, outflow end of the stent graft device as a whole;

at least one stent having a proximal stent end and a distal stent end and having a lumen extending therethrough between the proximal and distal stent ends, the stent graft device placeable at the vascular treatment site such that the proximal stent end of the at least one stent is located upstream of the distal stent end of the at least one stent, the distal stent end of the at least one stent providing said distal, outflow end of the stent graft device as a whole through which blood flowing through the stent graft device can exit the stent graft device, and

a covering of collagen having an isolated extracellular matrix layer that becomes remodeled by host tissue, secured to the at least one stent and extending therealong between the proximal and distal stent ends, wherein the covering is a sleeve that initially has a length about equal to twice the length of the at least one stent, a first portion of the sleeve extends along and complements an inside surface of the at least one stent, and a second portion of the sleeve is ~~folded back over the proximal stent end of the at least one stent and then~~ extends along and complements an outside surface of the at least one stent, ~~to the distal stent end thereof, and~~ wherein the first portion and the second portion of the sleeve are ~~secured~~ sutured to ~~at least the distal stent end and the proximal stent end of the at least one stent, and further wherein the first portion of the sleeve is secured to the inside surface of the at least one stent by sutures to struts of the at least one stent between the distal stent end and proximal stent end, and the second portion~~

of the sleeve is secured to the outside surface of the at least one stent by sutures to struts of the at least one stent between the distal stent end and proximal stent end.

2. (Cancelled)

3. (Currently Amended) A stent graft device suitable for placement at a vascular treatment site, the stent graft device comprising:

a proximal, inflow end of the stent graft device as a whole;

a distal, outflow end of the stent graft device as a whole;

at least one stent having a proximal stent end and a distal stent end and having a lumen extending therethrough between the proximal and distal stent ends; and

a covering of collagen having an isolated extracellular matrix layer that becomes remodeled by host tissue, secured to the at least one stent and extending therealong between the proximal and distal stent ends, wherein the covering is a sleeve that initially has a length about equal to twice the length of the at least one stent, a first portion of the sleeve extends along and complements inside surface of the at least one stent, and a second portion of the sleeve is folded back over the proximal stent end of the at least one stent and then extends along and complements an outside surface of the at least one stent to the distal stent end thereof, wherein the first portion and the second portion of the sleeve are sutured to the distal stent end and the proximal stent end of the at least one stent, wherein the first portion of the sleeve is secured to the inside surface of the at least one stent by sutures to struts of the at least one stent between the distal stent end and proximal stent end, wherein the second portion of the sleeve is secured to the outside surface of the at least one stent by sutures to struts of the at least one stent between the

distal stent end and proximal stent end, and wherein the stent graft further comprises a plurality
of stents connected together to form a stent frame with lumens of the respective stents coaligned to form a common continuous lumen extending from a distal stent frame end to a proximal stent frame end, and the covering extending therealong between the proximal and distal stent frame ends, the stent graft placeable at the vascular treatment site such that the proximal stent frame end is located upstream of the distal stent frame end, the distal stent frame end providing said distal, outflow end of the stent graft device as a whole through which blood flowing through the stent graft device can exit the stent graft device.

4. (Previously Presented) The stent graft device of claim 3, wherein the stent frame has eyelets at the proximal and distal ends.

5. (Previously Presented) The stent graft device of claim 4, wherein the covering is sutured to the stent frame using a filament of biocompatible material that extends through the eyelets.

6. (Previously Presented) The stent graft device of claim 3, wherein each of said plurality of stents has eyelets at proximal and distal ends thereof, and the covering is sutured to the stent frame using a filament of biocompatible material that extends through the eyelets.

7. (Previously Presented) The stent graft device of claim 1, wherein the covering is secured to the at least one stent at locations along the stent using a filament of biocompatible

material, the locations being adapted to secure the filament in position against movement axially with respect to the stent during deployment at a treatment site of a patient.

8. (Previously Presented) The stent graft device of claim 1, wherein the covering is a sleeve of small intestine submucosa material.

9. (Previously Presented) The stent graft device of claim 8, wherein the sleeve is defined by connecting together along a seam, opposite edges of at least one flat tissue of the small intestine submucosa material.

Claims 10-11 (Cancelled)

12. (Currently Amended) A stent graft device comprising:
a stent frame defining only a single lumen extending from a first end of said stent graft device to a second end of said stent graft device;
said stent frame having a proximal stent frame end and a distal stent frame end, said stent frame provided by a single stent or by a plurality of stents connected together with lumens of the respective stents coaligned to form a common continuous lumen;
the proximal stent frame end providing a proximal, inflow end of the stent graft device as a whole;
the distal stent frame end providing a distal, outflow end of the stent graft device as a whole;

a covering of collagen secured to the stent frame, said covering of collagen having an isolated extracellular matrix layer that becomes remodeled by host tissue; and

wherein the covering is a sleeve having a single lumen therethrough, the sleeve has a length about equal to twice the length of the stent frame, a first portion of the sleeve extends along and complements an inside surface of the stent frame, and a second portion of the sleeve is ~~folded back over the proximal stent frame end of the stent frame and then~~ extends along and complements an outside surface of the stent frame, ~~to the distal stent frame end of the stent frame, and wherein the first portion and the second portion of the sleeve are secured~~ sutured to at least the distal stent frame end of the stent frame that provides the distal, outflow end of the stent graft device as a whole, wherein the first portion and the second portion of the sleeve are sutured to the proximal stent frame end of the stent frame that provides the proximal, inflow end of the stent graft device as a whole, wherein the first portion of the sleeve is secured to the inside surface of the stent frame by sutures to struts of the stent frame between the distal stent frame end and proximal stent frame end, and wherein the second portion of the sleeve is secured to the outside surface of the stent frame by sutures to struts of the stent frame between the distal stent frame end and proximal stent frame end.

13. (Previously Presented) The stent graft device of claim 12, wherein the stent frame has eyelets at the proximal and distal ends.

14. (Previously Presented) The stent graft of claim 13, wherein the covering is sutured to the stent frame using a filament of biocompatible material that extends through the eyelets.

15. (Previously Presented) The stent graft device of claim 12, wherein the stent frame is provided by a plurality of stents connected together, and wherein each of said plurality of stents has eyelets at proximal and distal ends thereof and the covering is sutured to the stent frame using a filament of biocompatible material that extends through the eyelets.

16. (Previously Presented) The stent graft device of claim 12, wherein the covering is secured to the stent frame at locations along the stent frame using a filament of biocompatible material, the locations being adapted to secure the filament in position against movement axially with respect to the stent frame during deployment at a treatment site of a patient.

17. (Previously Presented) The stent graft device of claim 12, wherein the covering is a sleeve of small intestine submucosa material.

18. (Previously Presented) The stent graft device of claim 17, wherein the sleeve is defined by connecting together along a seam, opposite edges of at least one flat tissue of the small intestine submucosa material.

19. (Currently Amended) A stent graft delivery apparatus, comprising:
a transluminally advancable delivery device having a lumen communicating with a distal, open end; and
an expandable stent graft device having a first condition suitable for positioning the stent graft device in the delivery sheath lumen for delivery to a vascular treatment site and a second,

expanded condition adapted for deployment at the treatment site, the stent graft device comprising:

at least one stent having a proximal stent end and a distal stent end and having a lumen extending therethrough between the proximal and distal stent ends; and

a covering of collagen having an isolated extracellular matrix layer that becomes remodeled by host tissue, secured to the at least one stent and extending therealong between the proximal and distal stent ends, wherein the covering is a sleeve that initially has a length about equal to twice the length of the at least one stent, a first portion of the sleeve extends along and complements inside surface of the at least one stent, and a second portion of the sleeve ~~is folded back over the proximal stent end of the at least one stent and then~~ extends along and complements an outside surface of the at least one stent, ~~to the distal stent end thereof, and wherein the first portion and the second portion of the sleeve are secured to at least the distal stent end~~ and the proximal stent end of the at least one stent, wherein the first portion of the sleeve is secured to the inside surface of the at least one stent by sutures to struts of the at least one stent between the distal stent end and proximal stent end, wherein the second portion of the sleeve is secured to the outside surface of the at least one stent by sutures to struts of the at least one stent between the distal stent end and proximal stent end,

wherein the stent graft is positionable in the delivery device lumen such that upon deployment from the lumen at the vascular treatment site the proximal stent end of the at least one stent is located upstream of the distal stent end of the at least one stent.